

CLAIMS

What is claimed is :

1. An inbred corn seed designated MNI1, wherein a sample of said seed has been deposited under ATCC Accession number ____.
- 5 2. A corn plant or parts thereof, produced by growing the seed of claim 1.
3. Pollen of the plant of claim 2.
4. An ovule or ovules of the plant of claim 2.
5. A corn plant, or part thereof, having all the physiological and morphological characteristics of the corn plant of claim 2.
- 10 6. The corn plant of claim 2, wherein said plant is male sterile
7. A tissue culture of regenerable cells of a corn plant of claim 2.
8. The tissue culture of claim 7, the cells or protoplasts of the tissue culture being from a tissue selected from the group consisting of protoplast and calli, wherein the regenerable cells are derived from meristematic cells, leaves, pollen,
15 embryo, roots, root tip, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.
9. A corn plant regenerated from the tissue culture of claim 7, capable of expressing all the morphological and physiological characteristics of inbred corn plant MNI1.
- 20 10. A corn plant with all the physiological and morphological characteristics of the corn inbred MNI1, wherein said corn plant is produced by a tissue culture process using the corn plant of claim 5 as the starting material for such a process.
11. A method for producing a hybrid corn seed comprising crossing a first inbred parent corn plant with a second inbred parent corn plant and harvesting the
25 resultant hybrid corn seed, wherein said first or second parent corn plant is the corn plant of claim 2.
12. A hybrid corn seed produced by the method of claim 11.
13. A hybrid corn plant, or parts thereof, produced by growing said hybrid corn seed of claim 12.

14. Corn seed produced by growing said hybrid corn plant of claim 13 and harvesting the resultant seed.

15. A method for producing a hybrid corn seed comprising crossing an inbred plant according to claim 2 with another, different corn plant.

5 16. A hybrid corn seed produced by the method of claim 15.

17. A hybrid corn plant, or its parts, produced by growing said hybrid corn seed of claim 16.

18. Corn seed produced from said hybrid corn plant of claim 17.

19. A method for producing a MNI1-derived corn plant, comprising:

- 10 a) crossing inbred corn line MNI1, a sample of seed of said line having been deposited under ATCC accession number _____, with a second corn plant to yield progeny corn seed; and
- b) growing said progeny corn seed, under plant growth conditions, to yield said MNI1-derived corn plant.

15 20. A MNI1-derived corn plant, or parts thereof, produced by the method of claim 19, said MNI1-derived corn plant expressing a combination of at least two MNI1 traits selected from the group consisting of: a relative maturity of approximately 102-112 based on the the Comparative Relative Maturity Rating System for harvest moisture of grain, excellent seedling vigor, early pollen shed,

20 excellent brittle stalk resistance, excellent husk cover, above average stay green and adapted to the Central Corn Belt, Northcentral, Southwest and Western regions of the United States.

21. The method of claim 19, further comprising:

- 25 c) crossing said MNI1-derived corn plant with itself or another corn plant to yield additional MNI1-derived progeny corn seed;
- d) growing said progeny corn seed of step (c) under plant growth conditions, to yield additional MNI1-derived corn plants; and
- e) repeating the crossing and growing steps of (c) and (d) from 0 to 7 times to generate further MNI1-derived corn plants.

22. A further MNI1 derived corn plant or parts thereof, produced by the method of claim 21, said MNI1 derived corn plant expressing a combination of at least two MNI1 traits selected from the group consisting of : a relative maturity of approximately 102-112 based on the the Comparative Relative Maturity Rating System for harvest moisture of grain, excellent seedling vigor, early pollen shed, excellent brittle stalk resistance, excellent husk cover, above average stay green and adapted to the Central Corn Belt, Northcentral, Southwest and Western regions of the United States.

23. The method of claim 19, still further comprising utilizing plant tissue culture methods to derive progeny of said MNI1-derived corn plant.

24. A further MNI1-derived corn plant or parts thereof, produced by the method of claim 23, said MNI1-derived corn plant expressing a combination of at least two MNI1 traits selected from the group consisting of : a relative maturity of approximately 102-112 based on the the Comparative Relative Maturity Rating System for harvest moisture of grain, excellent seedling vigor, early pollen shed, excellent brittle stalk resistance, excellent husk cover, above average stay green and adapted to the Central Corn Belt, Northcentral, Southwest and Western regions of the United States.

25. The corn plant, or parts thereof, of claim 2, wherein the plant or parts thereof have been transformed so that its genetic material contains one or more transgenes operably linked to one or more regulatory elements.

26. A method for producing a corn plant that contains in its genetic material one or more transgenes, comprising crossing the corn plant of claim 25 with either a second plant of another corn line, or a non-transformed corn plant of the line MNI1, so that the genetic material of the progeny that result from the cross contains the transgene(s) operably linked to a regulatory element.

27. Corn plants, or parts thereof, produced by the method of claim 26.

28. A method for developing a corn plant in a corn plant breeding program using plant breeding techniques which include employing a corn plant, or its parts,

as a source of plant breeding material comprising: using the corn plant, or its parts, of claim 2 as a source of said breeding material.

29. The corn plant breeding program of claim 28 wherein plant breeding techniques are selected from the group consisting of: recurrent selection,
5 backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

30. A corn plant, or parts thereof, produced by the method of claim 28, said corn plant expressing a combination of at least two MNI1 traits selected from the group consisting of : a relative maturity of approximately 102-112 based on the the
10 Comparative Relative Maturity Rating System for harvest moisture of grain, excellent seedling vigor, early pollen shed, excellent brittle stalk resistance, excellent husk cover, above average stay green and adapted to the Central Corn Belt, Northcentral, Southwest and Western regions of the United States.

31. The corn plant of claim 5, further comprising a single gene conversion.

15 32. The corn plant of claim 31, further comprising a cytoplasmic factor conferring male sterility.

33. The single gene conversion of the corn plant of claim 31, where the gene is selected from the group consisting of: a transgenic gene, a dominant allele, and a recessive allele.

20 34. The single gene conversion of the corn plant of claim 31, where the gene confers a characteristic selected from the group consisting of: herbicide resistance, insect resistance, resistance to bacterial, fungal, or viral disease, male sterility, corn endosperm, and improved nutritional quality.

25 35. A corn plant, or part thereof, wherein at least one ancestor of said corn plant is the corn plant of claim 2, said corn plant expressing a combination of at least two MNI1 traits selected from the group consisting of : a relative maturity of approximately 102-112 based on the the Comparative Relative Maturity Rating System for harvest moisture of grain, excellent seedling vigor, early pollen shed, excellent brittle stalk resistance, excellent husk cover, above average stay green

and adapted to the Central Corn Belt, Northcentral, Southwest and Western regions of the United States.